

Actron AutoScanner® OBD II Scan Tool



Safety Precautions

This User's Manual describes the features of the Tool and provides step-by-step instructions for operating the Tool. Always refer to and follow safety messages and test procedures provided by the manufacturer of the vehicle and the Tool

Read the User's Manual completely before operating the Tool. An undetected or uncorrected vehicle malfunction could cause a serious. even fatal, accident. Important Safety Information in the User's Manual is intended to protect the user, bystanders and the user's vehicle.

Signal Words Used

AWARNING Indicates a possible hazardous situation which, if not avoided, could result in death or serious injury to operator or bystanders.

 $\begin{tabular}{ll} NOTICE & Indicates a condition which may result in lost information. \end{tabular}$

⇒ Indicates a single-step procedure.

MARNING This Tool may not detect every malfunction. Do not take chances with brakes, steering, or other vital functions of your vehicle, as a serious accident could result.

Important Safety Messages

- Always wear ANSI approved goggles for eye protection.
- Before testing a vehicle, make sure the transmission is in PARK (automatic transmission) or Neutral (manual transmission) and the parking brake is set.
- Never lay tools on the vehicle battery.
- Battery acid can burn. If contacted, rinse with water or neutralize with a mild base such as baking soda. If you splash your eyes, flush with water and call a physician immediately.
- Never smoke or have open flames near vehicle. Vapors from gasoline and battery are explosive.
- Do not use the Tool if internal circuitry has been exposed to moisture. Internal shorts could cause a fire and damage the Vehicle or Tool.

- Always turn the ignition key OFF when connecting or disconnecting electrical components, unless otherwise instructed.
- Most vehicles are equipped with air bags. If you elect to work around air bag components or wiring, follow your vehicle service manual cautions. You could be seriously injured or killed by an unintended deployment.

The air bag can still open several minutes after ignition is turned off.

 Always follow vehicle manufacturer's warnings, cautions, and service procedures.

About the Tool

The Tool allows you to retrieve and erase/reset diagnostic data from the vehicle control module. The diagnostic data can be used to help determine the cause of a vehicle malfunction.

Use the Tool to perform the following functions:

Codes/Data	Erase/Reset	Retrieve
Diagnostic Codes / Pending DTCs	Erase	•
View Data		•
MIL Status		•
I/M Monitors	Reset	•
Freeze Data	Erase	•
Vehicle Information		•
State OBD Check	Erase	•
Drive Cycle Mode	Reset	•

Tool Parts

LCD Display 8 line by 21 character monochrome backlit

LCD.

▲ READ key

Performs the Read Codes function and scrolls back through the screens. Press this key when an up arrow (♠) appears on the display.

▼ERASE key Performs the Erase Codes function and

scrolls forward through the screens. Press this key when a down arrow (Ψ) appears on

the display.

← ENTER key Selects displayed items.

← BACK key Returns to the Main Menu or previous screen.

OBD II Connector Connects the Tool to the vehicle connector.

Icons

The following icons may appear on the display:

↓ Indicates additional information is available on next

screen by using the **▼ ERASE** key.

↑ Indicates additional information is available on pre-

vious screen by using the A READ key.

Indicates a Pending DTC.

of # Appears only when viewing codes. Indicates code

sequence and quantity (code # of n). For example, if you see 2 of 9 you are looking at the 2nd of 9

codes reported by the computer module.

Mod \$## Appears only when viewing codes. Indicates the

computer module that reported the code.

Indicates that the ▲READ and ▼ERASE hot keys

are active.

Connect the Tool

To connect the Tool to the vehicle:

- Locate the OBD II connector under the steering column.
 If the connector is not there, a label should be there indicating the whereabouts of the connector.
- 2. If necessary, remove the cover from the vehicle connector.
- 3. Turn the ignition switch to the ON position. Do not start the engine.

 Plug the OBD II Connector attached to the Tool into the vehicle connector.

The Tool automatically reads Codes and I/M Monitors and displays the data. When done viewing data, press ← BACK key to return to Main Menu.



Main Menu User Interface

To select functions:

- From the <u>Main Menu</u>, press the <u>AREAD</u> or <u>VERASE</u> arrow key until the desired function is highlighted, then press the <u>↓</u> <u>ENTER</u> key to retrieve and display the results.
- When complete, press ← BACK to return to the Main Menu selection screen.

Read Codes

To read the codes:

⇒ Press and hold the ▲READ key for 2 seconds then release it, or Select Read Codes from Main Menu.

When you view codes, the Tool displays both Diagnostic Trouble Codes (DTCs) and Pending DTCs. Diagnostic Trouble Codes are reported when a component, sensor, or other part of the vehicle is indicating a malfunction is present. The malfunction must be present for a sufficient amount of time before the Tool will display a Diagnostic Trouble Code.

Pending DTCs are only reported if a problem occurs during the current or last completed drive cycle. Pending DTCs do not necessarily indicate

a faulty component or system. Pending DTCs convert to Diagnostic Trouble Codes when an emissions problem persists long enough to be considered a real problem, not an anomaly. Pending DTCs are indicated by a th icon.

Vehicle Selection

Vehicle Selection will be displayed for Read Codes when a manufacturer specific DTC is retrieved from the vehicle.

Erase Codes

The Erase function performs the following:

- ✓ Erases Codes (both Diagnostic Trouble Codes and Pending) DTCs)
- ✓ May erase Freeze Data results depending on the vehcle.
- ✓ Sets I/M Monitors to not ready.



NOTICE Perform Erase Codes function only after systems have been checked completely and DTCs have been written down.

To erase codes from the vehicle computer:

- 1. Set the ignition to Key On and Engine Off. Do NOT start the vehicle. The engine should not be running.
- 2. Press and hold the **▼ERASE** key for 3 seconds then release, or Select Erase Codes from Main Menu and press **LIENTER**.
- 3. When the confirmation message appears on the display, choose one of the following options.
 - To proceed with the operation: Press

 ENTER for YES.
 - To cancel the operation and return to the Main Menu: Press ←BACK for NO.

The Tool will automatically perform the Read Codes function after erasing codes. The Tool will then indicate the number of codes remaining.



NOTICE If after erasing codes a DTC returns, the problem has not been fixed or other faults are present.

MIL Status

MIL (Malfunction Indicator Lamp) status indicates if the vehicle computer is telling the MIL to illuminate when the engine is running.

- MIL ON indicates that the check Engine Light should be ON.
- MIL OFF indicates that the Malfunction Indicator Lamp should be OFF.

I/M Monitors

Inspection / Maintenance Monitors provide a snapshot of the Emission System operations by indicating that the I/M Monitors are *Ready* or *Not Ready*. For an I/M Monitor to be *Ready*, the vehicle must have completed a drive cycle (been driven long enough under proper conditions to have completed a drive cycle). A Monitor must be listed as *Ready* to pass an emissions test. If an I/M Monitor is *Not Ready*, it is because a drive cycle has not completed.

The Tool will indicate Ready (ok), Not Ready (inc), or Not Applicable (n/a) for each I/M Monitor. The Tool supports the following I/M Monitors:

Monitors	Expanded Name
Misfire Monitor	Misfire Monitor
Fuel System Mon	Fuel System Monitor
Comprehen Comp	Comprehensive Components Monitor
Catalyst Mon	Catalyst Monitor
Htd Catalyst	Heated Catalyst Monitor
Evap System Mon	Evaporative System Monitor
Sec Air System	Secondary Air System Monitor
A/C Refrig Mon	Air Conditioning Refrigerant Monitor
Oxygen Sens Mon	Oxygen Sensor Monitor
Oxygen Sens Htr	Oxygen Sensor Heater Monitor
EGR System Mon	Exhaust Gas Recirculation Monitor

This is a complete list of I/M Monitors supported by the Tool. The number of Monitors read by the Tool from your vehicle may vary. A diesel vehicle, for example, does not have an Oxygen Sensor Monitor. As a result, there will be no Oxygen Sensor Monitor status for a diesel vehicle.

Two types of *I/M Monitors* tests are:

- ☐ Since DTCs Cleared shows status of the monitors since the DTCs were last erased.
- ☐ This Drive Cycle shows status of monitors since the start of the current drive cycle. Refer to the vehicle service manual for more detailed information on emission-related monitors. and their status
- ✓ Some vehicles do not support *This Drive Cycle*. If vehicle supports both types of monitors the I/M Monitors Menu displays.

Drive Cycle Monitor

The Drive Cycle Monitor function is very similar to the I/M Monitors though the Drive Cycle Monitor is used to view **REAL TIME** operations of the Emissions System on OBD II vehicles.

- ✓ Drive Cycle Monitor continuously updates as the vehicle reports operations of the Emission System.
- ✓ Refer to the vehicle service manual for how to perform a drive cycle on your specific vehicle.
- ✓ Drive Cycle Monitor will only show the monitors that are inc (incomplete). When all monitors are complete the Tool will display a message.

See I/M Monitors for more information.

View Freeze Data

Displays a snapshot of operating conditions at the time the Diagnostic Trouble Code was created. See PID Definitions for more information.

Vehicle Information

The Vehicle Information function allows the Tool to request the vehicle's VIN number, calibration ID(s) which identifies software version in vehicle control module(s), calibration verification numbers (CVN(s)), and In-use Performance Tracking (IPT).

Vehicle Information function applies to model year 2000 and newer OBD II compliant vehicles.



NOTICE The Vehicle Information function is not supported by all vehicles. Also, not every vehicle supports every piece of information (for example, CVN, IPT, VIN).

System Setup

System Setup allows:

- · Display contrast to be changed,
- · Tool information to be viewed,
- · Display to be checked,
- · Operation of the keypad to be checked,
- · Memory of the Tool to be checked,
- · Language to be changed,
- · Units of measure to be changed.

State OBD Check (Emissions)

The State OBD Check function is used to display a basic status of the vehicle's OBD system.

The State OBD Check function has the following areas:	
☐ MIL STATUS ON or OFF	
Number of Codes Found	
□ Number of Monitors OK	
□ Number of Monitors Inc	
□ Number of Monitors N/A	

- State OBD Check should be done with the key on engine running (KOER) due to showing MIL status.
- ✓ The number of codes found are only DTCs and not Pending DTCs.
- ✓ The number of Monitors that are either OK, INC or NA are only Since DTCs Cleared and not This Drive Cycle.
- Refer to Read Codes and I/M Monitors for more detailed information about the results.

View Data

The View Data function allows real time viewing of the vehicle's computer module's PID data. As the computer monitors the vehicle, information is simultaneously transmitted to the Tool.

View Data allows the following items to be viewed on the Tool:
☐ Sensor data
Operation of switches
Operation of solenoids
Operation of relays

Multiple PIDs may be sent if vehicle is equipped with more than one computer module (for example a powertrain control module [PCM] and a transmission control module [TCM]. The Tool identifies them by their identification names (ID) assigned by manufacturer

Troubleshooting

- ☐ If a "LINK ERROR" message appears, cycle the ignition key to the OFF position for 10 seconds, then back ON, then press the ←J ENTER key. Make sure the ignition key is in the ON not the ACCESSORY position.
- ☐ If the MIL Status is ON and the MIL is not illuminated with the engine running, then a problem exists in the MIL circuit.

PID Definitions

NOTE: The Tool only displays the PIDs the vehicle supports.

Tool	Description	Tool	Description
ABS FRP	Absolute Fuel Rail Pressure	IGN ADV	Ignition Advance
ABS LOAD	Absolute Load Value	LT FTRM x	Bank x Long Term Air To Fuel Ratio Correction Factor
ABSLT TPS	Absolute Throttle Position	MAF	Mass Air Flow Sensor
ACC POS x	Accelerator Position x	MAP	Manifold Absolute Pressure
BARO PRS	Barometric Pressure	MIL DIST	Distance Since Malfunction Indicator Lamp Came On
CALC LOAD	Calculated Engine Load	MIL STATUS	Malfunction Indicator Lamp Light Status
CAT TEMP xy	Catalytic Converter Temperature Bank x, Sensor y	MIL TIM	Time Since Malfunction Indicator Lamp Was Activated
CLR DST	Distance Since Codes Cleared	O2S	O2 Sensor Output
CLR TIM	Time Since Codes Cleared	OBD2 STAT	On Board Diagnostics 2 System Type
CMD EQ RAT	Commanded Equivalence Ratio	OUTSID AIR	Outside Air Temperature

Tool	Description	Tool	Description
COOLANT	Engine Coolant	PTO STATUS	Power Take Off Status
EGR CMD	Commanded Exhaust Gas Recirculation	REL FRP	Relative Fuel Rail Pressure or Vacuum
EGR ERR	Exhaust Gas Recirculation Error	REL TPS	Relative Or Learned Throttle Position
ENG RUN	Engine Run Time	SECOND AIR	Secondary Air Pump Status
ENGINE	Engine Speed	ST FTRM	Short Term Fuel Trim
EQ RAT	Oxygen Sensor Equivalence Ratio	ST FTRM x	Short Term Fuel Trim Bank x
EVAP REQ	Commanded Evaporative Emission System Purge	THR POS x	Throttle Position x
EVAP VP	Evaporative Emission System Vapor Pressure	THROT CMD	Throttle Actuator Commanded
FUEL LVL	Fuel Level	TRIPS SNC CLR	Warmups Since Erase Codes
FUEL PRES	Fuel System Pressure	TROUB CODE	DTC That Set Freeze Data
FUEL SYS x	Fuel System x Loop Status	VEH SPEED	Vehicle Speed
IAT	Intake Air Temperature	VPWR	Vehicle Power

ACTRON HAND TOOLS